

2005 Diesel Engine Emissions Reduction (DEER) Conference

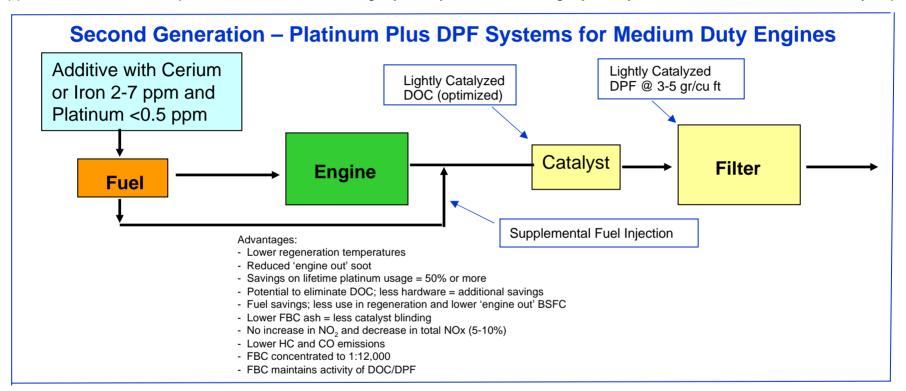
Chicago, IL

August 21 - 25, 2005

A Bimetallic Fuel Borne Catalyst for Reduced Precious Metal Use in Medium Duty Diesel Engines

Objectives: Improve DPF performance, reduce fuel use and reduce life cycle platinum use by 50%.

Approach: Use bimetallic platinum based FBC with lightly catalyzed DOC and lightly catalyzed DPF. Minimize fuel economy impact.



Phase 1

- Evaluate impact of FBC on commercial DOC/DPF system with supplemental injector on 2004 medium duty EGR engine Phase 2
- Integrate FBC into OEM 2007 medium duty DPF system
- Minimize previous metal loading on DOC and DPF

Phase 3

- Conduct field demonstration of optimized DPF system



Platinum Plus Emission Reduction Systems





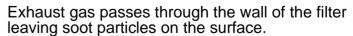
Catalyzed Wire Mesh Filter





Diesel Particulate Filter

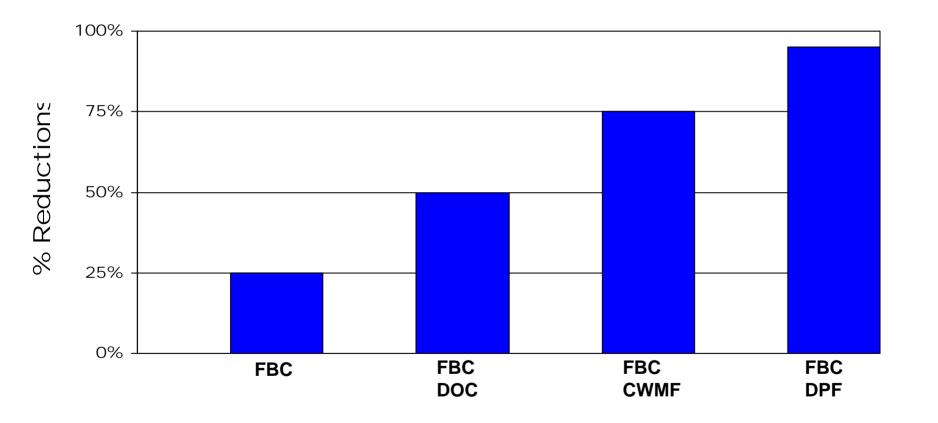




The collected soot must be 'burnt off' – This 'regeneration' can be promoted by Platinum Plus

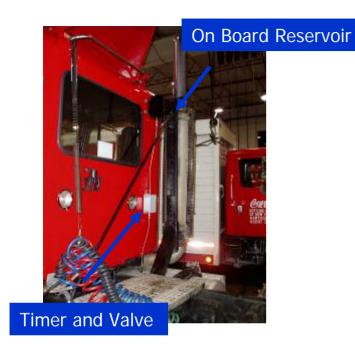


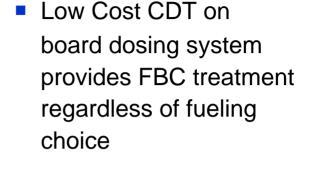
Platinum Plus Particulate Emission Reduction (Typical Performance with ULSD)





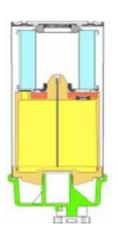
Platinum Plus Dosing Options











- "Smart Fuel Filter" with FBC under development with Fleetguard
- Designed to deliver FBC during normal service interval



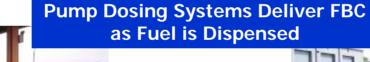
Platinum Plus Dosing Options

Manual Addition to Fuel Tanks



Pre-Treated Fuel Delivery by Fuel Supplier











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